

6935

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. 35143 Office No. H-6935

LOCALITY

State Alaska- Aleutian Islands

General locality Near Islands

Locality Buldir Island to Ingenstrem Rocks

194 3

CHIEF OF PARTY

G. C. Mattison

L. C. Wilder

EXPLORER

SURVEYOR

LIBRARY & ARCHIVES

DATE _____

6935

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

REG. NO.

H6935

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

REGISTER No. H-6935

Field No. 35143

State Alaska-Aleutian Islands

General locality Near Islands

Locality Buldir Island to Ingenstrom Rocks

Scale 1:200,000 Date of survey July to November, 1943

Instructions dated CS-218 - April, 1943, with additional instructions from the
Liaison Officer.

Vessel EXPLORER, SURVEYOR, and Escort Ships

Chief of party G. C. Mattison; L. C. Wilder

Surveyed by G. C. Mattison; L. C. Wilder

Soundings taken by fathometer, graphic recorder, hand lead, wire

Protracted by H. C. Parsons - E. E. Smith - R. M. Sylar

Soundings penciled by H. C. Parsons and R. M. Sylar

Soundings in fathoms feet at MLW MLLW

REMARKS: Smooth Sheet and Plotting by the

Seattle Processing Office.

Report on Smooth Plotting of

Section of H-6935 (1943)

describing location of Buldir Island,
hydrography around the island, and the
hydrography dependent upon Buoys CAST,
ABEL and BAKER

Introduction-

The survey of Buldir Island and vicinity was planned and executed under unusual conditions which were not conducive to standard hydrography. Buldir Island, being a good radar contact, was to be used as a rendezvous for the attack on Kiska Island. Most of this work was done under battle conditions in the cover of fog. The Coast Guard Cutter ONONDAGA was provided as escort vessel while offlying task forces gave overall protection from the nearby enemy task force. The ONONDAGA was chosen because of her radar and fathometer equipment. Speed was of the essence as the invasion waited on the location of the dangerous reefs and shoals in the vicinity of the rendezvous and on the invasion route.

As I was cartographic engineer aboard the EXPLORER at this time and helped in some of the field work, I would like to point out these and other limiting factors. This was one of the first times that radar-tandem control N.B. had been used for hydrographic surveying. Experienced crews and tried methods were lacking. The EXPLORER placed two officers aboard the ONONDAGA to correlate the field work. Lines and courses were prearranged and communications limited to visual signals. Because of the dense fog and the speed of the survey, there was no time for calibration of instruments, training of crews, refinements of methods, current studies, or comparison of radar and visual fixes. Our orders read: to outline the 50, 100, and 1000 fathom curves throughout the area, and therefore, development of dangers found was omitted.

The field parties used the position, azimuth, and topography of Buldir Island as shown on H.O. View Chart #3. Distinctive features on Buldir I. were spotted on the boat sheet and used as hydrographic signals. Control was maintained by radar, three-point fixes, dead reckoning, taut wire, astronomic fixes, and buoys.

Smooth Plotting-

In the smooth plotting of this sheet, the series of sun and star sights, taken at Tahoma Reef, were plotted, and although the triangle of error was large, the average of the sights, marked excellent, approximated the average center of all sights taken.

(Buoy Cast)

The U.S.S. KING was assumed to be at this position, and her radar distance and bearing to Buldir Peak was plotted. The distance and bearing of 35.2 nautical miles - $07\frac{1}{2}^{\circ}$ T - was taken from the best of five bearings and distances. Three of the five distances were recorded as 35.2 miles, one was 35.4 miles, and the fifth was questioned. Although the distances were recorded as contour distances, crossings throughout the area and other bearings taken at Buldir Reef indicate that this distance must have been to Buldir Peak itself.

Method of Determining the Size and Azimuth of Buldir Island-

A separate sheet was used for this work. Instead of the view chart, the size of the island was determined by graphics. This was then transferred to the smooth sheet by holding the astronomic location of Buldir Peak and the azimuth determined by recorded ranges.

Size-

From the plotting of the boat sheet (view chart), the island was found too small by an apparent error of approximately one mile.

In plotting the graphic sheet, the location of Buldir Rock was arbitrarily taken. Fixes were selected from the records in which the escort vessel had located herself by radar distance and visual bearings from this rock. The position of the EXPLORER was then found for each of these positions such position being a bearing and distance from the escort vessel.

From these, the position whose visual sextant cuts involved Buldir Rock were selected and the cuts were plotted. Enough cuts were found by this method to locate Buldir Peak and East Tangent (east end) in relation to Buldir Rock (west end). The overall length of the island, thus found, was compared to that of the photo-compilation (scale 14,500) and found to be within 0.11%. The photo-compilation was then reduced to 1:200,000 and the rest of the three-point fixes plotted. These fixes checked with their respective radar distances.

East Tangent to Buldir Rock was found to be 5.00 miles long against a length of 4.65 miles from the view chart. H.O. photo compilation T-6954, approx. scale, 1:14500, scales 5.00 miles; U.S. Engineers quad scales 4.65 mi. T-6954 apparently is most nearly correct.

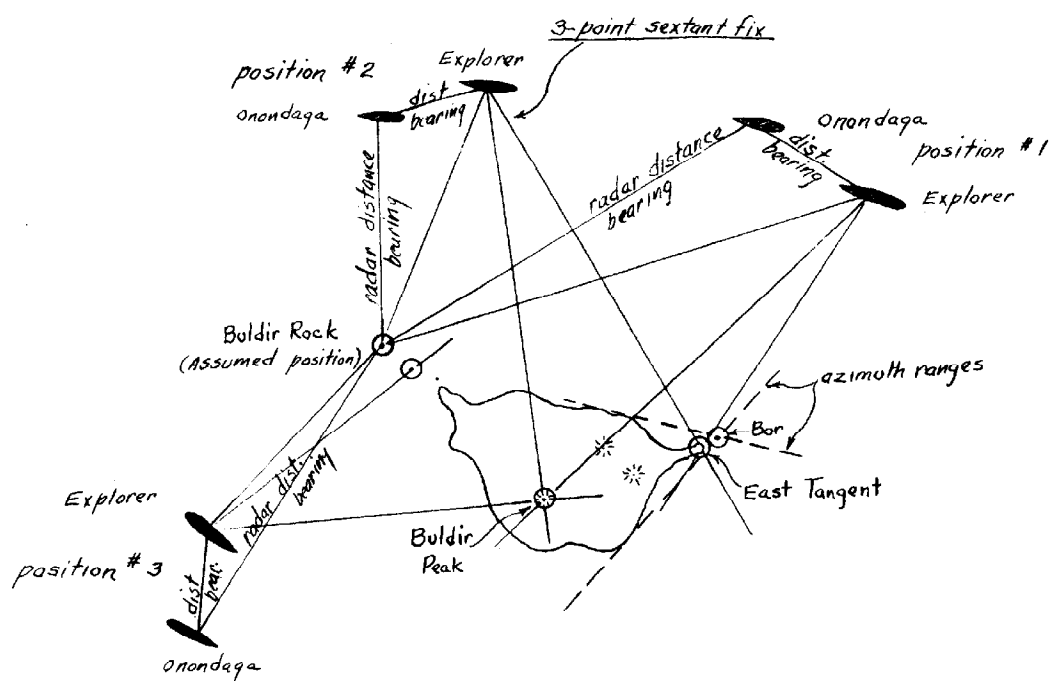


Diagram showing method of locating hydrographic signals by means of two vessels running in tandem. Escort having radar keeps the primary control, and survey ship locates signals by sextant cuts.

Azimuth- (BOR to DEL - $288^{\circ} 50' T$)

Fixes and bearings had been taken when signal BOR came in range with both the right tangent and then the left tangent. This served to give an azimuth to the graphical photo-compilation sketch. (Pos. 9 and 11B, July 25)

Signal Control-

All other signals or distinctive signals were spotted on the reduced photo-compilation. No jumps or discrepancies were found in three-point fixes taken by the EXPLORER.

The corrected sketch was now transferred to the smooth sheet holding the astronomically located position of Buldir Peak and the determined azimuth.

List of Signals and Radar points of contact-

Buoy ABEL - Buldir Reef
 Buoy BAKER- Middle Reef
 Buoy CAST - Tahoma Reef
 E. Tangent- Highest point of land on the N.E.
 tangent of Buldir Island
 E. Point - Highest point of land on spit joined to
 N.E. tangent of Buldir Island
 BEACH - Nearest point of land (usually shoreline)
 Buldir Rock (DEL)- Highest islet on the west shore of
 Buldir Island
 S.E. Tangent (HEP)- High water rock off the S.E. point
 of Buldir Island
 GUS - Islet inshore from Buldir Rock
 TAB - High water rock off west side of island
 LOW - A low high water rock northeast of DEL
 BOR - High water rock off east end of island
 BUL - Highest peak on island
 DIR - Highest peak on east side of island
 MAB - Peak on east part of island, southeast of DIR

Tahoma Reef- Lat. $51^{\circ} 47'$ to $51^{\circ} 51'$ Long. $175^{\circ} 41'$ to $175^{\circ} 51'$

Tahoma Reef was surveyed by the EXPLORER using radar control from the U.S.S. KING. The KING was anchored at a survey buoy CAST.

Buoy CAST- Lat. $51^{\circ} 47.2$ Long. $175^{\circ} 46.4$

N.B.

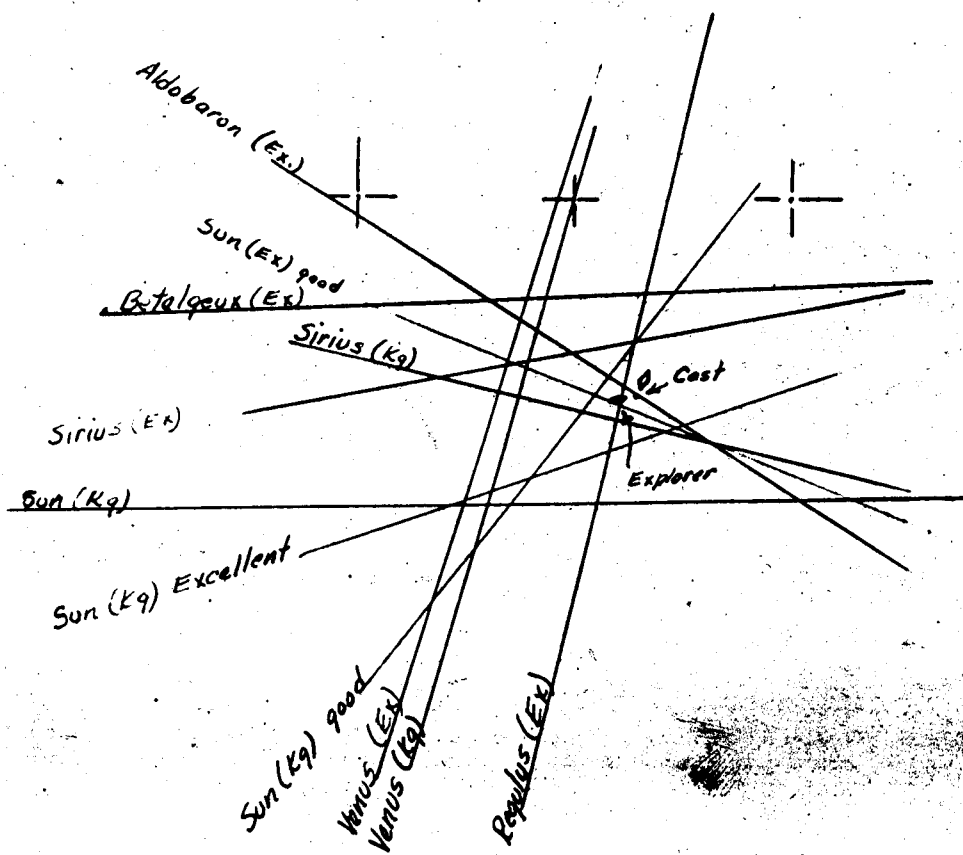
Buoy CAST was located by a series of star and sun sights taken by both the EXPLORER and the U.S.S. KING. At the same time, a radar distance and direction was taken from CAST to Buldir Peak on Buldir Island by the U.S.S. KING. — On this astronomic position and radar distance and direction depends the survey position of Buldir Peak, control tie-in for the eastern part of the survey.

175° 30'
52° 00'

40'

50'

176° 00'
52° 00'



50'

50'

40'
30'

40'

50'

H-6935

40'
176° 00'

Star sights taken at Tahoma Reef
by
U.S.C.G.S.S. Explorer & U.S. King
1943

△ BULDIR 1945 *Bennett 1934 Datum*

52° 21' 15".032
175° 54' 54.066

△ BULDIR 1945 *Kiska Datum -4-*

52° 21' 07".40
175° 54' 36".10

(1625.6)
228.7
(452.4)
683.3

From Division of Geodesy
1-21-46
F.M.A.

13

Buldir Peak- (2500') Lat. 52° 09:5 to 52° 11:0 Long. 176° 16' to 176° 25' ✓

Buldir Peak was found to be 35.2 nautical miles - 07½ T - from Buoy CAST.

Buldir Reef- Lat. 52° 09:5 to 52° 11:0 Long. 176° 16' to 176° 25' ✓

Buldir Reef was surveyed and located by the EXPLORER using radar control from the U.S.S. ONONDAGA (CG). The ONONDAGA was anchored at the survey buoy ABEL. ✓

Buoy ABEL- Lat. 52° 10:8 Long. 176° 17:8 ✓

Buoy ABEL was located by radar distance and direction from Buldir Peak by the ONONDAGA and a taut wire determination by the EXPLORER. Bearings were also taken to Kiska Volcano from this buoy. These bearings checked the Tahoma Reef determination of Buldir Peak. ✓

N. Buldir Anchorage-

Two star sights (poor horizon) were taken at the anchorage at Buldir by the EXPLORER. These placed Buldir Peak 3 miles 94° T from the final accepted location. These sights were rejected. ✓

Middle Reef- Lat. 51° 59:1 to 52° 01:1 Long. 175° 59' to 176° 01' ✓

Middle Reef was surveyed by the EXPLORER using radar control from the ONONDAGA anchored at survey buoy BAKER. ✓

Buoy BAKER- Lat. 52° 02:12 Long. 175° 58:9 ✓

Buoy BAKER was located by radar distance and direction from Buldir Peak by the ONONDAGA. ✓

Strength of Control-

The sounding lines were plotted in the following order:

1. Lines controlled from each of the three survey buoys
2. Lines using visual three-point fixes around Buldir Island ✓
3. Lines with both visual and radar fixes.
4. Lines with radar fixes.
5. Lines with visual bearings.
6. Dead reckoning lines.

Those lines with weaker control were made to cross with those of stronger control, except in cases where there was no control and the lines did not give critical soundings. These latter were omitted. ✓

In all cases, the dead reckoning control was used as a check and to adjust the lines for currents and winds. ✓

Soundings-

~~All the shoalest soundings were used,~~ and in cases of crowded soundings, ✓
a selection was made of the representative soundings.

Least Depths-

Buldir Reef-

Least depths of 3 and $3\frac{1}{2}$ fathoms were found in part of the area covered by this reef. Heavy patches of kelp and three groups of breakers were seen. ✓
Currents are such that the kelp may be towed under. Although no rocks were visible above the water, they can be seen from the air.

Middle Reef-

A least depth of 3 fathoms was found at Middle Reef. Because of the calmness of the weather, no breakers were visible. A large kelp mass covers the area. ✓

Tahoma Reef-

Two large groups of breakers were visible with two smaller groups on the eastern end, visible in moderate weather. A large kelp mass was seen at the eastern-most end of the reef. ✓

Shoal Indications-

<u>Latitude</u>	<u>Longitude</u>	<u>Depth-fms.</u>
51° 41.0 ✓	175° 49.2 ✓	55 ✓
52 17.6 ✓	176 12.4 ✓	37 ✓
52 18.1 ✓	176 10.8 ✓	29 ✓
52 15.3 14.3	176 05.0 07.0	52 29
52 20.9 ✓	176 20.0 ✓	95 94
52 22.0 ✓	176 06.5 ✓	82 ✓
52 25.3 ✓	175 47.6 ✓	33 ✓
52 28.0 ✓	175 46.0 ✓	35 ✓

Instrumental Errors-

Radar bearings (ONONDAGA)-

A compass rose, in degrees, was on the fluorescent screen of this radar. As the radar revolved clockwise, a direction arrow revolved with the radar and indicated the direction of the range in the picture. The sweep of the radar could be stopped at any point to take a range and direction.

N.B.

Bearings taken from the radar rose were all relative to the ship's head; that is, the course of the gyro compass has to be added to this bearing to give true bearings.

Radar comparison-

The radar used by the ONONDAGA was accurate to 50 yards to a scale limit of 24 miles in distance and in azimuth to 1/2 degree.

N.B.

The radar used by the U.S.S. KING, U.S.S. ORACLE, U.S.S. CYANE (CG) could only be read to parts of a mile with bearings interpolated between 10° divisions on the scale.

Radar contact comparisons-

With sharp pinnacles and dome-shaped objects, a good direction and distance can be secured except in cases where the object blends into the background. Left tangents are also good. Distances are best taken to sharp breaking bluffs.

N.B.

Gyro bearings (EXPLORER)-

Bearings taken by the EXPLORER tend to be as much as 2 1/2° in error after about turns and even 90° turns. The gyro usually settled down after 10 minutes of running. The ONONDAGA usually made quite easy turns in order to keep their gyro in adjustment.

Range finder (EXPLORER)-

At some time during the season, the EXPLORER's range finder was dropped and broken. It was then temporarily repaired with no adequate readjustments. Because of subsequent discrepancies in distances between simultaneous readings between ONONDAGA's radar against EXPLORER's range finder, and KING's range finder against EXPLORER's range finder, the EXPLORER's range finder distances cannot be relied upon.

Fathometer Records (ONONDAGA)-

On the initial phase (0-100 fms.), it is possible to have, in depths of over 100 fathoms, a trace come through 100 fathoms too shoal.

N.B.

Respectfully submitted,

Harvey C. Parsons

Harvey C. Parsons
Seattle Processing Office

Approved and Forwarded:

F. H. Hardy

F. H. Hardy
Officer in Charge,
Seattle Processing Office.

H-6935 (1943)

Attu I. to Buldir I.Report by the Seattle Processing OfficeScales of Sheets-

The boat sheets are on a scale of 1:351,000, which was the same scale as the chart available when the work began in 1943. The smooth sheet was made on a scale of 1:200,000 as recommended by the Chief of Party, with the intention of plotting also the survey between Attu, Agattu, and the Semichi Islands on the same sheet. In fact, a considerable part of the positions of that work was plotted on H-6935, where the lines still show. Then, a letter from the Director indicated that a larger scale was desired for plotting the survey around the Near Islands. A sheet on a scale of 1:100,000 was prepared for the survey of Attu, Agattu, and the Semichi Islands as far east as Ingenstrom Rocks. It is numbered H-6936. That part of it which had been plotted on H-6935 was replotted on H-6936. This separation of the sheets also accounts for the large number of unused signals on H-6935.

Datum-

The datum of the Near Islands is USN 1934. The position of Buldir Peak, which controls the eastern end of all the Near Islands to Buldir lines as well as all the development in the vicinity of Buldir Island is independently located. Its position depends upon an astronomic position, the resultant of eleven sun and star sights, ^{at Bora East} with bearings and radar distances to Buldir. The peak was 35 1/4 miles away N 7 1/2 E true from the astronomic position. The plotting of the position lines is shown on a photostat sheet in this report.

N.B.

Whatever error there is in the position of Buldir Peak relative to the Near Islands would appear as so much dead reckoning error, more or less. That error cannot be separated from navigation errors in the lines between Buldir and the Near Islands.

Azimuth Line on Buldir Peak-

As the plotting of the sheet neared completion, a theodolite cut at station STAR on Shemya Island to Buldir Peak became available. The azimuth from STAR is 288° 34' 14.7". Two distances of 124,000 meters and 132,000 meters from STAR were assumed and the points computed. The positions are:

N.B.

	124,000 meters	132,000 meters
Lat.	52° 22' 16.567	52° 20' 48.109
Long.	175 50 13.922	175 56 51.188

This line falls about three quarters of a mile southward from the plotted position of Buldir Peak. } N.B.

Control-

The triangulation stations are from Scaife 1943 and Sylar USED 1943, both corrected to USN datum.

Plotting - General-

The area immediately around Buldir, southward to Tahoma Reef and eastward to the limit of the sheet was plotted by H. C. Parsons, who has written a separate report (attached).

The lines of the EXPLORER and her escorts between Buldir and the Near Islands south of latitude 52° 27' were plotted by E. E. Smith and the SURVEYOR's lines north of this latitude between Buldir and the Semichi I. were plotted by R. M. Sylar. The part by Mr. Parsons is not concerned in the following remarks.

Current Data-

No current observations were made but a careful estimate from the ship's drift and the condition of the tide rips in the vicinity of buoy "ABLE" indicate that a maximum current of 4 to 5 knots exists in that locality. The current flows roughly N.E. on the flood and S.W. on the ebb. } N.B.

Two ship method of sounding-

The plotter is impressed with the possibility of greatly strengthening reconnaissance, dead reckoning, or R. A. R. lines by running with two ships parallel as on this sheet, each carrying its independent and complete records. Each would make reciprocal observations on the other vessel at simultaneous positions, distances between them being determined by range finders of good quality or radar. In the present instance, this was not fully carried out as to records kept, the quality of equipment is often in question, and the crew of one vessel was a stranger to the work. N.B.

Lines S.S.E. of Agattu-

Between Latitudes $52^{\circ} 00'$ and $52^{\circ} 10'$ near meridian $173^{\circ} 50'$ are lines of the EXPLORER and her escort on "W" day. These were plotted from the records of H-6936 (1943). The lines extended beyond the limits of H-6936 and for that reason, were plotted on H-6935.

15 Fathom E.D. Shoal-

Charted on #8865 at Lat. $52^{\circ} 33'$ Long. $175^{\circ} 23'$ -

This originates ^{with} ~~from~~ rejected soundings recorded in Vol. 15, P. 15, position 3B. These soundings were not credited by the field party. They were made by the escorting vessel, the GILMORE. They have been read for the wrong depth range, or scale, and are 400 fathoms too shoal, as indicated in note on P. 14, Vol. 15. The smooth sheet plotting supports this statement. N.B.

The fathogram mentioned in the sounding record is not available.

15 fathom E.D. shoal removed from chart 8865 F.M.A. 1-22-1946

Field No. 35143H-6936LIST OF SIGNALSBuldir Island and Vicinity

BUL	Radar distance and bearing from Buoy CAST
BOB	Photo compilation - readjusted to fit
DEL	scale determined by radar distances.
DIR	"
GUS	"
HEP	"
LOW	"
MAST	Volume 11, page 3
MAB	Photo compilation as above
TAB	"
Buoy ABEL	See Page _____
Buoy BAKER	" " _____
Buoy CAST	" " _____

Semichi Islands

ALOID 1943	Triangulation
GUM 1944	Triangulation
LEMON 1944, or DALE	Triangulation
TOWER	Hydrographic - Transferred from H-6936
SHEMYA 1943	Triangulation

Agattu Island

ARM 1943	Triangulation
EAST	Hydrographic - Transferred from H-6936
FIRST	Quadrangle Sheet
GAT 1943	Triangulation
KOL	Hydrographic - H-6936
KRUG 1943	Triangulation
OT	Hydrographic - H-6936
PAR 1943	Triangulation
PUG (Pk. 1, 1943)	Triangulation
Pk. 4, 1943	Triangulation
SAB	Hydrographic - H-6936
TRI	Hydrographic - H-6936

Attu Island

CENT 1943	Triangulation
RIDGE 1943	Triangulation
WHISTLE BUOY - Massacre Bay entrance - See H-6936	

H-6935STATISTICS

Vol. #	Vessel	Date	Day	Positions	Miles Sounding Line
		<u>1943</u>			
1	EXPLORER	7/24	A	35	111.0
	"	7/25	B	150	123.5
	"	7/26	C	43	88.0
	"	7/29	D	79	147.0
2	"	7/31	E	39	58.3
	"	8/2	F	43	71.0
	"	8/7	G	41	115.0
	"	8/9	H	96	125.0
3	"	8/10	J	88	91.0
	"	8/11	K	60	100.0
	"		(K day continued in Vol. 6, Sheet H-6936)		
	"	11/2	AL	33	113.0
	"	11/4	M	34	114.7
	"		(M day continued in Vol. 5, H-6935)		
4	"	9/29	P	54	198.7 (Pos. 1-5P plotted on Chart 8864)
	"	9/30	Q	92	182.6
5	"	11/4	M	3	3.0
	"	11/5	AN	24	107.0
	"	11/9	AP	25	85.0
	"	11/24	QA	19	36.0
	"	11/26	R	45	120.0
6	Launch 1	8/10	a	33	5.0
7	ONONDAGA	7/29	A	20	111.0
-	"	8/2	F	3	
	"	8/7	G	27	105.0
8	"	7/25	A	53	106.0
	"	7/26	B	30	88.0
	"	7/28	C	56	96.0
	"	7/29	D	80	147.0
	"	8/10	K	44	77.0
	"	8/11	L	46	117.0
	"		(L day begins in Vol. 10)		
9	"	7/30	E	41	72.0
	"	7/31	F	44	67.0
	"	8/1	G	86	126.0
	"	8/8	H	74	106.0
	"	8/9	J	97	128.0
10	"	8/11	L	27	
11	KING	9/29	A	50	33.0
	"	9/30	B	65	
12	ORACLE	11/4	M	25	110.0
	"	11/5	AN	16	111.0
	CYANE	11/26	R	34	120.0

Vol. #	VESSEL	Date	Day	Positions	Miles
		<u>1943</u>			<u>Sounding Line</u>
13	ORACLE	11/2	AL	29	113.0
	CYANE	11/9	AP	20	85.0
	"	11/24	QA	15	36.0
14	SURVEYOR	10/25	A	15	48.0
	"	10/27	B	33	75.0
	"	11/12	C	47	69.0
	"	11/13	D	35	52.0
	"	11/22	E	29	46.0
	"	11/23	F	26	132.0
15	GILMORE	10/25	A	18	58.0
	"	10/27	B	34	97.0
	"	11/23	F	76	132.0

The following is recorded in the books of H-6936:

6	EXPLORER	8/11	K	32	112.0
13	"	11/22	W	21	24.0
14	"	11/22	W	11	10.0
19	CYANE	11/22	W	16	25.0
				<hr/>	<hr/>
Totals -----				2461	4819.8

Buldir I. to the Near Is.

H-6935

TIDAL NOTE

Massacre Bay Automatic Gage

Navy Pier No. 1

Latitude 52° 50'45

Longitude 173 11.65

Staff reading of MLLW ----- 3.3 feet

Aleutian Islands
Buldir Island to Attu & Agattu Is.

30

INDEX OF RECORDS

H-6935 & H-6936

Plotted on H-6935 (Field No. 35143)

Plotted on H-6936 (Field No. 16143)

Vol. #	Vessel	Date	Pos. Nos.	Vol. #	Vessel	Date	Pos. Nos.
		<u>1943</u>				<u>1943</u>	
1	EXPLORER	7/24	1-35 A				
		7/25	1-150 B				
		7/26	1-43 C				
		7/29	1-79 D				
2	EXPLORER	7/31	1-39 E				
		8/2	1-43 F				
		8/7	1-41 G				
		7/9	1-96 H				
3	EXPLORER	8/10	1-88 J				
		8/11	1-60 K*				
		*continued in Vol. 6, H-6936 ←					
		11/2	1-33 AL				
		11/4	1-34 M*				
		*continued in Vol. 5, H-6935					
4	-----			EXPLORER	9/5		114-136 AN
	EXPLORER	9/29	1-54 P				
		9/30	1-92 Q				
5	EXPLORER	11/4	35-37 M				
		11/5	1-24 AN				
		11/9	1-25 AP				
		11/24	1-19 QA				
		11/26	1-45 R				
6	EXP. Lch. #1	8/10	1-33a				
7	ONONDAGA	7/24	1-20 A				
		8/2	no numbers F				
		8/7	1-27 G				
8	ONONDAGA	7/25	1-53 A				
		7/26	1-30 B				
		7/28	1-56 C				
		7/29	1-80 D				
		8/10	1-44 K				
		8/11	27-72 L*				
		*L day begins in Vol. 10					

Vol. #	Vessel	Date	Pos. Nos.
		1943	
9	ONONDAGA	7/30	1-41 E
		7/31	1-44 F
		8/1	1-86 G
		8/8	1-74 H
		8/9	1-97 J
10	ONONDAGA	8/11	1-27 L*
		*continued in Vol. 8	
11	KING	9/29	1-50 A
		9/30	1-65 B
12	ORACLE	11/4	1-25 M
		11/5	1-16 N
	CYANE	11/26	1-34 R
13	ORACLE	11/2	1-29 AL
	CYANE	11/9	1-20 AP
		11/24	1-15 QA
14	SURVEYOR	10/25	1-15 A
		10/27	1-33 B
		11/12	1-47 C
		11/13	1-35 D
		11/22	1-29 E
		11/23	1-76 F
15	GILMORE	10/25	1-18 A
		10/27	1-34 B
		11/23	1-76 F

20 SURVEYOR 10/27 33-40 B -
1-8 D
(copied in both volumes)

1	HYDROGRAPHER	7/14	1-70 A
		7/18	1-91 B
		7/24	1-36 C
2	HYDROGRAPHER	7/24	36-61 C
		7/25	1-132 D
		7/31	1-55 E
3	HYDROGRAPHER	7/31	56-77 E
		8/2	1-130 F
		8/3	1-43 G
4	HYDROGRAPHER	8/3	43-116 G
5	H. Lch. #2	7/25	1-39 d
6	EXPLORER	9/3	1-106 AL
		9/4	1-49 AM

EXPLORER 8/11 61-92 K*
*continued from Vol. 3,
H-6935

Plotted on H-6935 (Field No. 35143)

Plotted on H-6936 (Field No. 16143)

Vol. #	Vessel	Date	Pos. Nos.
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EXPLORER	11/22	13-34 W
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EXPLORER	11/22	35-45 W
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Vol. #	Vessel	Date 1943	Pos. Nos.
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7	EXPLORER	9/4 9/5	50-137 AM 1-113 AN
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8	EXPLORER	10/3 10/4 10/5 10/6	1-57 A 1-83 B 1-87 C 1-39 D
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9	EXPLORER	10/6 10/10 10/11 10/12	40-52 D 1-116 G 1-56 H 1-71 J
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10	EXPLORER	10/8 10/9	1-127 E 1-90 F
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11	EXPLORER	10/16 10/18 10/21	1-119 K 1-34 L 1-109 M
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12	EXPLORER	10/25 10/26 10/27 11/2	1-80 N 1-120 P 1-7 Q 1-29 R
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13	EXPLORER	11/3 11/9 11/15 11/21 11/22	1-44 S 1-36 T 1-62 U 1-102 V 1-13 W
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14	EXPLORER	11/22 11/24 11/25	46-66 W 1-36 X 1-32 Y
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15	EXP Lch.#1	10/11 10/17	1-54 a 1-56 b
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16	KING	10/4 10/5 10/6 10/11 10/12 10/16	1-47 b 1-46 c 1-21 d 1-13 h 1-43 j 1-73 k
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17	KING ORACLE	10/18 10/21 10/25 10/26	1-8 l 1-51 m 1-41 n 1-58 p
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Plotted on H-6935 (Field No. 35143)

Plotted on H-6936 (Field No. 16143)

Vol. #	Vessel	Date	Pos.Nos.
	CYANE	11/22	7-22 w

Vol. #	Vessel	Date	Pos.Nos.
		1943	
18	ORACLE	10/27	1-4 q
		11/2	1-12 r
		11/3	1-21 s
	CYANE	11/9	1-15 t
19	CYANE	11/15	1-33 u
		11/21	1-47 v
		11/22	1-6 w
			23-24 w
		11/24	1-19 x
		11/25	1-14 y
20	SURVEYOR	10/21	1-47 A
		10/24	1-34 B
		10/25	1-55 C
		10/27	1- 8 D
		11/1	1-77 E
		11/2	1-9 F
21	SURVEYOR	11/2	10-84 F
		11/9	1-16 K
		11/11	1-7 L
		11/12	1-19 M
		11/15	1-35 N
		11/17	1-24 P
		11/22	1-24 Q
		11/24	1-36 R
22	SURVEYOR	11/3	1-102 G
		11/4	1-33 H
		11/8	1-24 J
23	GILMORE (DE-18)	10/21	1-35 A
		10/24	1-27 B
		10/25	1-31 C
		10/27	1 D
	ENGSTROM (DE-50)	11/1	1-49 E
		11/2	1-53 F
24	ENGSTROM (DE-50)	11/3	1-58 G
		11/4	1-22 H
		11/8	1-13 J
		11/15	1-30 N
		11/17	1-9 P

Respectfully submitted,

Edgar E. Smith

Edgar E. Smith
Cartographic Engineer
Seattle Processing Office

2/28/45

Approved and Forwarded:

F. H. Hardy

F. H. Hardy
Officer in Charge,
Seattle Processing Office.

GEOGRAPHIC NAMES

Survey No.

H6935

Name on Survey

	On Chart No.	On previous survey No.	On U. S. quadrangle Maps	From local information	On local Maps	P. O. Guide or Map	Rand McNally Atlas	U. S. Light List	
A	B	C	D	E	F	G	H	K	
<u>Alutian Islands</u>				(for title)					1
<u>Bulder Island</u>							USGB		2
<u>Ingenstrom Rocks</u>									3
<u>Semichi Islands</u>							USGB		4
<u>Agattu Island</u>							"		5
<u>Attu Island</u>							"		6
<u>Bering Sea</u>							"		7
<u>Bulder Reef</u>									8
<u>Tahoma Reef</u>									9
<u>Middle Reef</u>									10
									11
									12
<u>Massacre Bay</u>				(location of tide staff)					13
									14
									15
									16
									17
									18
									19
									20
									21
									22
									23
									24
									25
									26
									27

Names underlined in red approved

by L. Heck on 9/21/45

Surveys Section (Chart Division)

H6935

HYDROGRAPHIC SURVEY NO.

Records accompanying survey:

Boat sheets; sounding vols.; wire drag vols.;
bomb vols.; graphic recorder rolls;
special reports, etc.
.....

The following statistics will be submitted with the cartographer's report on the sheet:

Number of positions on sheet	.2461
Number of positions checked	...37.
Number of positions revised	...2. + numerous rejections
Number of soundings recorded
Number of soundings revised (refers to depth only)	...17. + numerous rejections
Number of soundings erroneously spaced
Number of signals erroneously plotted or transferred
Topographic details	Time
Junctions	Time ...16..
Verification of soundings from graphic record	Time ...16..

Verification by J.A.M. McCormick... Total time .130.. Date 9/6/45...

Review by J.A.M. McCormick... Time .55.. Date 9/28/45..

PA @
Humm.

Form 712
DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
Rev. June 1937

TIDE NOTE FOR HYDROGRAPHIC SHEET

7 April 1945

~~Division of Hydrography and Topography~~

✓ Division of Charts: Attention: H. W. MURRAY

Plane of reference approved in
15 volumes of sounding records for

HYDROGRAPHIC SHEET 6935

Locality Buldir Island to Near Islands, Aleutian Islands, Alaska

Chief of Party: G. C. Mattison and L. C. Wilder in 1943

Plane of reference is mean lower low water reading

3.3 ft. on tide staff at Massacre Bay

6.8 ft. below B. M. 1

Height of mean high water above plane of reference is 3.3 feet.

Condition of records satisfactory except as noted below:

CK Green

Chief, Division of Tides and Currents.

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. 6935

FIELD NO. 35143

Aleutian Islands; Near Islands; Buldir Island to Ingenstrem Rocks
Surveyed in July - November 1943 Scale 1:200,000
Project No. CS-218

Soundings:

808A Fathometer
Dorsey III "
312 "
Hughes "
NMB-1 "
NJ-3 "

Control:

Three-point fixes on shore signals
Radar bearings and distances
Gyro bearings and range-finder distances
Dead reckoning

Chief of Party - G. C. Mattison; L. C. Wilder
Surveyed by - G. C. Mattison; L. C. Wilder
Protracted by - H. C. Parsons; E. E. Smith; R. M. Sylar
Soundings plotted by - H. C. Parsons; R. M. Sylar
Verified and inked by - J. A. McCormick
Reviewed by - J. A. McCormick, Sept. 28, 1945
Inspected by - H. W. Murray

1. Shoreline and Signals

The descriptive report includes index of authorities and comprehensive discussion of fixed and floating control points. Topography of Agattu and the Semichi Islands was reduced from that on H-6935 (1943); reduction and adjustment of Buldir topography is described in the report.

2. Bottom Configuration

The survey is a reconnaissance of an area where recorded depths range between 3 and 1900 fathoms. The steep slopes invite poor agreement at sounding line crossings but the painstaking adjustment of the survey by the Seattle Processing Office has reduced discrepancies to negligible proportions.

Depth curves are of necessity generalized but will be of help in evaluating any track line information which might be submitted to this office.

3. Adjoining Surveys

An excellent junction was effected with H-6936 (1943) on the west.

4. Previous Surveys

This Bureau had not previously surveyed any part of the subject area.

5. Comparison with Chart 8864 (Print of June 2, 1945).
Chart 8865 (Print of January 9, 1945).
Chart 9198 (Print of February 2, 1945).

Depths now charted in this area are, with minor exceptions, preliminary values reported by the present field party in advance of processing. Differences between preliminary and final results are many and varied. The smooth plot changed positions of some lines as much as three miles, and many soundings were rejected because of dubious interpretation. A "15 E.D." in lat. $52^{\circ} 33'$, long. $175^{\circ} 23'$ on Chart 8865 is the result of an escort vessel's failure to realize that its fathometer was making a complete revolution between outgoing impulse and return echo and that 400 fathoms should be added to the dial reading (see descriptive report). The 15 was rejected and should be removed from the chart.

The note, "15 fathoms reported in this vicinity" in lat. $52^{\circ} 18'$, long. $176^{\circ} 12'$ on Chart 8864 is a compromise between a 15 fathom depth (formerly charted) reported by the U.S.S. Manning in 1904 (Chart Letter 37) and depths of 29 and 37 fathoms (charted) on the present survey. As development on the present survey is not intense enough to disprove the reported 15, the note should be retained on the chart.

Survey buoys ABEL and BAKER off Buldir and Middle Reefs were described in Letter 586 of 1943 (also Restricted N. to M. 18 of 1943) as likely to remain in place for several months; consequently they were charted as navigational aids. As two years have elapsed since they were planted, it is recommended that they now be removed from the chart.

The present survey cannot be considered basic but it is an excellent reconnaissance. The charts should be brought to agreement with it.

6. Compliance with Project Instructions

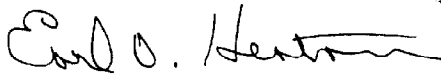
Excellent

7. Additional Field Work Recommended

Further work in this area will be in the form of basic surveys which will supersede the present reconnaissance. Sub-areas requiring close development are readily apparent on the smooth sheet.



Chief, Nautical Chart Branch

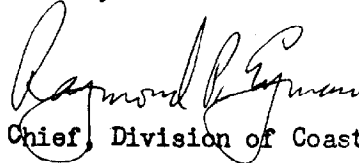


Chief, Section of Hydrography

Examined and approved:



Chief, Chart Division



Chief, Division of Coastal Surveys

NAUTICAL CHARTS BRANCH

SURVEY NO. *H. 6935*

Record of Application to Charts

[illegible]

M-2168-1

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.